DOCUMENT RESUME

ED 063 152 SE 013 764

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TITLE	Language Arts: The Literature of Ecology.
INSTITUTION	Dade County Public Schools, Miami, Fla.
PUB DATE	71
NOTE	16p.; An authorized course of instruction for the Quinmester Program
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Ecology; *Environmental Education; Instruction; *Language Arts; *Objectives; Secondary Education; *Teaching Guides; Units of Study (Subject Fields)
IDENTIFIERS	Quinmester Program

ABSTRACT

The course guide for a language arts unit within the Dade County Florida Quinmester Program lists performance objectives for the unit designed to give students a clearer understanding of the ecological problems that confront mankind. The viewpoint taken is that of the layman, not the scientist. Selections from state-adopted and other books are included in separate lists, and refer mainly to the environmental problems of land use, air and water pollution, and overpopulation. Selections from periodicals are also listed. Advice on teaching strategies, learning activities that may be used, and additional audio-visual aids that may be useful is given. (AL)

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AUTHORIZED COURSE OF INSTRUCTION FOR THE QUINMESTER PROGRAM

DADE COUNTY PUBLIC SCHOOLS

Language Arts: THE LITERATURE OF ECOLOGY 5114.52
5115.52
5116.52
5365.65

DIVISION OF INSTRUCTION • 1971

SE 013 107

THE LITERATURE OF ECOLOGY

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Language Arts, Science

Written by Gloria Douglass
and
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for the
DIVISION OF INSTRUCTION
Dade County Public Schools
Miami, Florida
1971

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Copies of this publication may be obtained through

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COURSE NUMBER

COURSE TITLE: THE LITERATURE OF ECOLOGY

5114.52
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COURSE DESCRIPTION: A course designed to give the student a clearer understanding of the ecological problems that confront mankind. Readings in the course include, but are not limited to The Environmental Handbook, The Population Bomb, Defoliation. The approach in this course will be from the viewpoint of the layman, not the scientist.

I. PERFORMANCE OBJECTIVES

A. The student will identify ecological problems in his environment.

B. The student will apply meanings of environmental terminology to readings and discussions.

C. The student will contrast institutions that adversely affect the environment with organizations that are dedicated to the preservation of environment.

D. The student will read non-fiction to establish the broad areas of pollution in our environment.

E. The student will classify the problems that confront man in his environment according to some ecological schematic.

F. The student will predict the extent of an environmental problem.

G. The student will devise a method of presenting an interpretation of an environmental problem to the class.

H. The student will evaluate an important ecological problem according to classroom specifications such as panel discussions, debates, oral or visual presentations.

I. The student will integrate all factors which contribute to the balance in nature.

J. The student will formulate possible solutions to environmental problems.

K. The student will interpret environmental problems assessed in fictional readings.

II. COURSE CONTENT

A. Rationale

The literature of ecology will encompass a student-centered approach to alerting the student to environmental problems. The course should be so

structured to encourage the student to not only become aware of problems but to share his investigation and experiences in a spirit of fellowship. Rather than a competitive relationship, there should be a mutual exchange of ideas and assistance among the students. Each student should participate in the class projects of disseminating knowledge of the environmental crisis to fellow students and suggesting group sponsored projects as possible solutions to immediate environmental problems.

The philosophy of this course should stress individual involvement and dedication to this current and vital subject of man in a troubled environment.

Through this course, the student will become aware of the delicate balance of nature and the attendant consequences when this balance is upset by man. By identifying the problems of the environment--identifying the causes of the imbalance created in nature--the students will come to the conclusion that their health and welfare depend upon the health of the ecosystem in which they live.

B. Range of subject matter

1. Identification of environmental problems

a. Land pollution

1) Pesticides
2) Herbicides
3) Strip mining
4) Litter and garbage disposal
5) Planning and zoning
6) Diminishing green areas

b. Air pollution

1) Transportation
2) Industry
3) Uncontrolled burning
4) Increased carbon dioxide

c. Water pollution

1) Sewage
2) Mercury
3) Oil spills
4) Drainage (fertilizer run-off)
5) Thermal
6) Phosphate

d. Population explosion

1) Birth rate
2) Consumption of diminishing resources
3) Effect on individual of overcrowding

2. Research extent of environmental problems

a. Read the following material for clarification of problem:

1) The Population Bomb by Dr. Paul Ehrlich
2) National Environmental Test
3) The Environmental Handbook

b. Individual investigation of environmental problems

1) Current periodicals
2) Field trips
3) Library resources

3. Personalize an environmental problem that will be individually examined

a. Decide on a problem for independent study
b. Develop research into a presentation for class evaluation

4. Present synthesis of research to class

a. Visual presentation depicting ecological problems

1) Posters containing pictures and articles from magazines and newspapers depicting environmental deterioration
2) Slides created by students or purchased
3) Photographs of neighborhood conditions taken by students or found in local newspapers.
4) Filmstrips located in local or school libraries showing relevant problems of the environment

b. Oral presentation instructing class on the problems of the environment

1) Discussion by individual students presenting investigated facts of the ecological crisis
2) Panel discussion by group of students informed on a specific area of pollution study
3) Debate by selected students on controversial problems of ecology. Example: Federal intervention in population explosion or The SST

5. Evaluate material through critical discussion and examination

   a. Questionnaires compiled by class and distributed to fellow students and/or community to ascertain local areas of environmental concern
   b. Surveys conducted within community to determine how problems can be corrected
   c. Polls to form pressure groups on local legislators
   d. Open forum to synthesize opinion and results of study

6. Formulate solutions to environmental problems

   a. Action groups

      1) Distribute printed material throughout school and community describing ecological problems and areas of concern
      2) Hang posters in stores depicting neighborhood manifestations of ecological imbalance
      3) Form clean-up committees to combat local problems of litter
      4) Write letters to elected officials suggesting legislation favoring the environment
      5) Petition government agencies for action

   b. Discussion groups to formulate solutions to immediate local problems

7. Interpret environmental problems assessed or projected in fiction

   a. Read a novel which shows man's dependence on his environment
   b. Read poems and essays describing man's disregard of his environment

III. TEACHING STRATEGIES

A. Projects

1. National Environment Test
2. Bulletin boards depicting pollution problems
3. Audio-visual materials (see list of film, filmstrips, tapes)
4. Posters encouraging action in the environmental crisis
5. Visual demonstrations showing population growth, etc.
6. Scientific experiments showing water conditions, etc.
7. Pictorial presentation of ecological imbalance

B. Writing assignments

1. Slogans that keep people alerted to problems of environment
2. Scenario of future conditions if ecological problems remain unchecked
3. Notebook compiled by class on current problems of the environment under investigation in newspapers and magazines
4. Letters to legislators and environmental offenders expressing concern
5. Research project of independent study expressing one area of pollution

C. Discussions

1. Panels
2. Debates
3. Forums

D. Short lectures

1. Overview of environmental problems
2. Clarifications of student presentations
3. Implications of environmental problems
4. Sensitive balance of nature

E. Resource personnel

1. Teacher of sociology, psychology, or science to discuss ecological imbalance
2. Librarian to aid students in investigating problems of pollution for presentation to class
3. Conservationists

    a. Audubon Society
    b. Zero Population Growth
    c. Izaak Walton League

4. Representatives of concerned institutions

    a. Recycling companies
    b. Turkey Point
    c. Water plant

F. Field trips

1. Miami River

2. Water treatment plant
3. City dump
4. Turkey Point
5. Local area (school grounds, neighborhood canals or dumping areas)
6. Parks (Everglades National Park, Crandon Park, Greynolds Park, etc.)
7. Airport

IV. LEARNING ACTIVITIES

A. The student will identify ecological problems in his environment

1. Students will compile a list of environmental problems from their personal experience and/or reading
2. Students will tour campus or immediate neighborhood to look for pollution problems such as litter on school grounds and in canals and streets, smoke or smog from nearby factories, noise from trucks and buses
3. Students will take National Environmental Test
4. Students will compile a list of environmental terminology

B. The student will apply meanings of environmental terminology to readings and discussions

1. Students will create bulletin boards pictorially describing some common terminology
2. Students will make use of dictionaries to find meanings of environmental terms

C. The student will contrast institutions that adversely affect the environment with organizations that are dedicated to the preservation of environment

1. Students will investigate through newspapers and magazines institutions that adversely affect the environment and organizations that are dedicated to preserving the environment
2. Students will compile a list of local, state, and federal representatives and agencies influential in the ecological movement
3. Students will construct letters to state and federal representatives, political organizations, industries, and conservation groups in order to clarify positions on environmental problems
4. Students will take field trips to:

   a. Turkey Point to investigate thermal pollution
   b. Miami River to investigate water pollution and litter
   c. Airport to investigate noise pollution, air pollution, and water pollution
   d. Audubon meeting to investigate activities and concern of an influential conservation group

e. Local water plant to investigate process of sewage treatment and purification of water

D. The student will read non-fiction literature to establish the broad areas of pollution in our environment

1. Students will read The Population Bomb by Dr. Paul R. Ehrlich to gain insight into the total ecological problem
2. Students will read essays and poems from The Environmental Handbook to establish particular areas of interest in the environmental crisis
3. Students will read Chapters 7-15 in Terracide by Ron M. Linton to discover the implications of industrialization on ecological problems
4. Students will read Defoliation by Thomas Whiteside to discover problems of herbicides in our environment
5. Students will read The Silent Spring by Rachel Carson to establish the extent of environmental pollution by pesticides
6. Students will read essays and articles from current magazines and newspapers such as: Audubon, The Florida Naturalist, National Geographics, Natural History

E. The student will classify the problems that confront man in his environment according to some ecological schematic

1. Class will discuss major areas of pollution through open forum
2. After an overview of ecological problems is presented, students will group themselves for independent study of a major environmental problem
3. Students will investigate library resources and material from periodicals

F. The student will predict the extent of an environmental problem

1. Students will compile information in their area of interest
2. Students will post in class a running bibliography of sources and references concerning environmental problems
3. Students will project future of environmental problems through the writing and enacting of scenarios
4. Students will create pictorial representation of future man and his environment if ecological crisis is not stopped

G. The student will devise a method of presentating an interpretation of an environmental problem to the class

1. Students will present results of investigation and collection of information in the form of:

a. Panel discussion
b. Visual presentation
c. Debate
d. Dramatization
e. Scientific experiment

H. The student will evaluate an important ecological problem according to classroom specifications such as oral and/or visual presentations of groups or individual

1. Students will survey extent of environmental problems through questionnaires, discussions, polls
2. Students will evaluate results of collection of opinions and information through open discussion.
3. Students will criticize The Bomb Handbook, Defoliation and examine consequences of imbalance in nature

I. The student will integrate all factors which contribute to the balance in nature

1. Students will compile a list of imbalances created in nature by man
2. Students will compile a list of endangered and/or extinct species
3. Students may take field trip to Everglades National Park to observe delicate balance in nature

J. The student will formulate possible solutions to environmental problems

1. Class will establish priorities for immediate local problems by making the school and community aware of problems through:

a. Posters
b. Pamphlets
c. Slogans
d. Short public address announcements

2. Class may sponsor contest for best slogan and/or award "Boobie" prize to worst offender of environment in local area
3. Class may distribute car litter bags to classmates and at local community centers
4. Class will form action groups in the school and/or community to combat local problems

K. The student will interpret environmental problems assessed in fictional readings

1. The students may read the following novels to ascertain man's dependence upon his environment:

a. The Grapes of Wrath by John Steinbeck
b. The Call of the Wild by Jack London
c. Gone With the Wind by Margaret Mitchell
d. Brave New World by Aldous Huxley
e. This Perfect Day by Arthur Levin
f. On the Beach by Nevil Shute
g. Huckleberry Finn by Mark Twain
h. Time Is Short and the Water Rises by John Walsh and Robert Gannon

2. The students may read poems, essays and articles that show man's influence and dependence on his environment

a. "Chicago" by Carl Sandburg
b. "The Gift Outright" by Robert Frost
c. "The Big Two-Hearted River" by Ernest Hemingway
d. "Gift From The Sea" by Anne Morrow Lindberg
e. "The Wasteland" by T. S. Elliot
f. "In Wildness Is The Preservation of The World" by Henry David Thoreau

3. The student will discuss his interpretation of fictional writings and relate this to problems of man in a troubled environment

V. STUDENT RESOURCES

A. State-adopted textbooks

1. Hemingway, Ernest. "The Big Two-Hearted River," Adventures In Appreciation. Olympic Edition. New York: Harcourt, Brace and World, Inc., 1958.

2. Keats, John. "The Poetry of Earik," Western Literature: Themes and Writers. New York: McGraw Hill Book Co., 1967.

3. Krutch, Joseph Wood. "Conservation Is Not Enough," Adventures In American Literature. Olympic Edition. New York: Harcourt, Brace and World, Inc., 1958.

4. London, Jack. "All Gold Canyon," American Literature: Themes and Writers. New York: McGraw Hill Book Co., 1967.

5. Orwell, George. "Shooting an Elephant," Encounters: Themes In Literature. New York: McGraw Hill Book Co., 1967.

6. Thoreau, Henry David. "Why I Went To The Woods," The United States In Literature. Glenview, Illinois: Scott, Foresman and Co., 1968.

7. White, E. B. "Walden (June 1939)," Adventures In American Literature. Classic Edition. New York: Harcourt, Brace and World, Inc., 1968.

B. Non-state-adopted supplementary materials

1. Books

a. Carson, Rachel. Silent Spring. Greenwich, Conn.: Fawcett Publications, Inc., 1962.
b. DeBell, Garrett, ed. The Environmental Handbook. New York: Ballantine Books, 1970.
c. Ehrlich, Paul R. Dr. The Population Bomb. New York: Ballantine Books, 1968.
d. Huxley, Aldous. Brave New World. New York: Peremial Library, Harper and Row.
e. Levin, Ira. This Perfect Day. New York: Pyramid Publications.
f. Linton, Ron M. Terracide. New York: Paperback Library, 1971.
g. Littell, Joseph Fletcher (ed.). Man In The Expository Mode. Evanston, Illinois: McDougal, Littell and Co., 1970.
h. London, Jack. Call of The Wild. New York: Pathfinder-Bantam Press.
i. Lynch, Patricia and Chandler, Robert. National Environmental Test. New York: Pocket Books, 1971.
j. Mitchell, Margaret. Gone With The Wind. New York: Macmillan Co.
k. Shute, Nevil. On The Beach. New York: Bantam Press
l. Steinbeck, John. The Grapes of Wrath. New York: Bantam Press
m. Twain, Mark. Huckleberry Finn. New York: Harcourt Brace Jovanovich, Inc.
n. Walsh, John and Gannon. Time Is Short and the Water Rises. New York: Tower Publications.
o. Whiteside, Thomas. Defoliation. New York: Ballantine Books, 1970.

2. Reference materials

Having Your Say About "Say Goodbye" published by Quaker Oats, 1971. Contains lists of names and addresses of organizations supporting conservation of natural resources. May be ordered for twenty-five cents from:

The Quaker Oats Company
Merchandise Mart Plaza
Chicago, Illinois 60654

3. Periodicals

a. Atkinson, Brooks. "Biscayne Bay--The Spender, The Endless

Fight to Save It," Audubon, Sept., 1970. 72 #5:36-47.

b. Brooks, Paul. "Oklawaka: The Sweetest Water-Lane in the World." Audubon, July, 1970. 72 #4:34-45.

c. Clement, Roland C. "Pesticides Do's and Don't," Audubon, March, 1970. 72 #2:50-51.

d. Clement, Roland C. "The Meaning of Conservation," Audubon, July-August, 1965. 67 #4:218.

e. Cornwall, Dr. George. "Environment Hazards of Pesticides," The Florida Naturalist, January, 1971. 44 #1:3-6.

f. Craighead, F. C. Sr. "The Role of the Alligator," The Florida Naturalist, January, 1968. 41 #1:2-7.

g. Ehrlich, Paul R. Dr. "People Pollution," Audubon, May, 1970. 72 #3:4-9.

h. Gillespie, Charles. "Don't Broadcast This, But Pollution Can Get You Fired," Audubon, January, 1971. 73 #1:3-8.

i. Glooschenko, Walter and Glooschenko, Valerie. "Thermal Pollution," The Florida Naturalist, January, 1969. 42 #1:3-8.

j. Graham, Frank Jr. "Ear Pollution," Audubon, May, 1969. 71 #3:34-40.

k. Graham, Frank Jr. "Pesticides, Politics and the Public," Audubon, July-August, 1967. 69 #4:54-62.

l. Harriss, Robert C. "Are Florida's Lakes and Rivers Dying?," The Florida Naturalist, July, 1970. 43 #3:95-96.

m. Laycock, George. "Where Have All The Pelicans Gone?," Audubon, September, 1969. 71 #5:10-17.

n. Nelson, Glaylord Senator. "Stop Killing Our Oceans," Reader's Digest, February, 1971. pp. 132-136.

o. Montague, Peter and Montague, Katherine. "Mercury: How Much Are We Eating?," Saturday Review, February 6, 1971. pp. 50-57.

p. Pekkanier, John. "Ecology: A Cause Becomes a Mass Movement," Life Magazine, January 30, 1970. 68 #3:22.

q. Toner, Mike. "The Sound of Pollution," The Miami Herald, March 7, 1971. p. 1.

r. Peterson, Roger Tory and Truskow, Frederick Kent. "The Endangered Osprey," National Geographic, July, 1969. 136 #1:52-67.

s. Sloane, Kathy and Sloane, Harvey. "Pollution Free Living," American Home, January, 1971. 74 #1:8-42.

t. Schlee, Susan. "All The Fat and Slollage Fuddy Murrineis," Natural History, December, 1970. 79 #10:18-29.

u. Smith, McGregor Jr. "Dialogue Between Rich America and America the Beautiful," The Florida Naturalist, July, 1967. 40 #3:105.

v. Young, Gordon. "Pollution, Threat to Man's Only Home," National Geographic, December, 1970. 130 #6:739-780.

VI. TEACHER RESOURCES

A. Textbooks

1. Krutch, Joseph Wood. "Conservation Is Not Enough," Adventures in American Literature. Olympic Edition. New York: Harcourt, Brace and World, Inc., 1958.
2. White, E. B. "Walden (June 1939)," Adventures In American Literature. Classic Edition. New York: Harcourt, Brace and World, Inc., 1968.

B. Professional Books and Periodicals

1. Allen, James E. "Statement on Environmental Education," Nation's Schools, April, 1970.
2. American Association of School Administrators. Conservation In The People's Hands. Washington, 1964.
3. Douglas, Donald G. and Stewart, John R., ed. The Vanishing Landscape. Skokie, Illinois: National Textbook Co., 1970.
4. Schoenfeld, Clay, ed. Outlines on Environmental Education. Madison, Wisconsin: Dembar Educational Research Services, 1971.
5. Stapp, William B. Integrating Conservation and Outdoor Education Into the Curriculum. Minneapolis, Minn: Burgess Publishing Co., 1965.
6. Udall, Stewart L. The Quiet Crisis. New York: Holt, Rinehart and Winston, 1963.

C. Films

1. Breaking The Web. (1-00421) Pictura, 11 min. Color.
2. Conservation Of Natural Resources. (1-00409) EBEC, 11 min. B&W. (This is an old film but can show how long people have been concerned with the problems of conservation.)
3. Junkdump. (on order: March, 1971).
4. Junkyard. (1-05864) Film Associates B. F. A. 10 min. Color.
5. Recycling Aluminum. 11 min. Color. Free order from:
   Mr. Bruce Rubin
   Ronald Levitt Associates
   350 Sevilla
   Coral Gables, Florida 33134
6. Streams. (on order).
7. Survival of the Kit Fox. (1-13705) Journal Films, Imperial Film Co., 15 min. Color.
8. Sylvan Sketches. (on order).
9. Two Yosemites. (on order--we hope). May be ordered from:
   Sierra Club Film
   Available Films
   25358 Cypress Avenue
   Hayward, California 94544
10. What Are We Doing To Our World? Part I and Part II. McGraw-Hill Book Co., Contemporary Division. 25 min. each part B&W. $18.00 per film.

May be ordered from:

McGraw-Hill Book Company
Contemporary Division
Hightstown, New Jersey 08520

D. Filmstrips

1. Air and Water. The New York Times. Filmstrip on Current Affairs. 15 min. B&W.
2. Problems of Cities. The New York Times. Filmstrip on Current Affairs, 1968. 1 record, 1 filmstrip, 1 guide, 16 min. B&W.
3. The Population Explosion. The New York Times. Filmstrip on Current Affairs. 15 min. B&W.
4. What's Happening to Our Natural Resources? The New York Times. Filmstrip on Current Affairs. 15 min. B&W.

Note: The above filmstrips are available from:

The New York Times
Filmstrips on Current Affairs
229 W. 43 Street
New York City, New York

Miami Carol City Senior High School has these filmstrips.

E. Audio-Tapes

1. Sunlit Years Series, Guy Bradley (3-00074).